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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/996,940 | 11/30/2001 | Seong Soo Park | 108256-00013 | 4017 |

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| EXAMINER | |
|---|---|
| SHAND, ROBERTA A | |
| **ART UNIT** | **PAPER NUMBER** |
| 2616 | |

DATE MAILED: 06/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/996,940 | PARK ET AL. | |
| | Examiner | Art Unit | |
| | Roberta A. Shand | 2616 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *20 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

### *Claim Objections*

1. Claims 1, 2, 7 and 10 are objected to because of the following informalities: Claims should not contain acronyms (SRNC and TTI) without the definition. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lundsjo (U.S. 6473442 B1) in view of Furuskar (U.S. 6704898 B1) and further in view of Morelos-Zaragoza (U.S. 6101626).

4. Regarding claim 1, Lundsjo (col. 2, line 53 – col. 3, line 34) teaches a data transmitting method using adaptive coding of a physical layer of an asynchronous mobile communication system where a SRNC (fig. 3, 122) consisting of a MAC layer and RLC for transmitting channel data and a base station (fig, 3, 200b) connected to the SRNC (122) with a wired interface, consisting of the physical layer being in charge of the actual data transmission, comprising: receiving transport blocks and their RLC sequence numbers from a MAC layer through a wired interface

5. Lundsjo does not teach keeping the received TBs and their RLC SNs stored for a predetermined time after discarding one or more whose RLC is overlapped with the pre-stored TBs; adjusting a puncturing rate based on information on notifying acknowledgement, received from a remote counterpart for previously transmitted TBs, and applying the adjusted puncturing rate to the stored TBs in the middle of a preparing process for transmitting the TBs through a physical channel.

6. Furuskar teaches (fig. 5B) keeping the received TBs and their RLC SNs stored for a predetermined time after discarding one or more whose RLC is overlapped with the pre-stored TBs from a remote counterpart for previously transmitted TBs, and applying the puncturing rate to the stored TBs in the middle of a preparing process for transmitting the TBs through a physical channel (col. 7, line 22, col. 8, line 37). It would have been obvious to one of ordinary skill in the art to adapt this to Lundsjo's system so optimum throughput in response to fluctuation of error rate on a packet radio channel is provided.

7. Furuskar does not explicitly teach adjusting the puncturing rate.

8. Morelos-Zaragoza teaches (fig. 4 and col. 4, lines 41-65) adjusting a puncturing rate based on information on notifying acknowledgement. It would have been obvious to one of ordinary skill in the art to adapt this to Lundsjo and Furuskar's system so optimum throughput in response to fluctuation of error rate on a packet radio channel is provided.

9. Regarding claim 2, Furuskar teaches (Fig. 5B) the acknowledgement information is received for every TTI-grouped TBs from the remote counterpart.

10. Regarding claim 3, Lundsjo teaches (col. 4, lines 5-20) reporting the acknowledgement information to the MAC layer.

11. Regarding claim 4, Morelos-Zaragoza teaches (fig. 4) maintaining the puncturing rate if the acknowledgement is indicative of no error and stepping down the puncturing rate if the acknowledgement is indicative of an error.

12. Regarding claim 5, Furuskar teaches (fig. 5B) the predetermined time is equal to or longer than a time elapsing from transmission of a TB till arrival of acknowledgement

13. Regarding claims 6 and 7, Furuskar teaches (fig. 5B) deleting a TB if the acknowledgement is indicative of a non-error, or retransmitting the TB if the acknowledgement is indicative of an error.

14. Regarding claims 8 and 9, Furuskar teaches (fig. 7A) transmits the stored TBs with puncturing rate information prepositioned to the TBs.

15. Regarding claims 10 and 11, Lundsjo teaches (fig. 3) a base station of an asynchronous mobile communication system connected to a SRNC, with a wired interface consisting of a physical layer, comprising: a CRC attaching means calculating CRC at each TB and attaching it to each TB (302); a segmenting means organizing the CRC-attached TBs to adapt to physical layer (col. 4, lines 5-20); a channel coding means channel coding the TBS (304); a multiplexer

multiplexing the TBs (310); and a mapping means interleaving the multiplexed TBs and mapping them to a physical channel (318).

16. Lundsjo does not teach a buffer storing TBs received from a MAC layer through the wired interface; a controller discarding a TB or controlling retransmission based on whether or not the TB is acknowledged and determining a puncture rate; and a puncturing means puncturing each TB at the rate determined by the controller.

17. Furuskar teaches (fig. 5B) a buffer storing TBs; a controller discarding a TB or controlling retransmission based on whether or not the TB is acknowledged. It would have been obvious to one of ordinary skill in the art to adapt this to Lundsjo's system so optimum throughput in response to fluctuation of error rate on a packet radio channel is provided

18. Furuskar does not explicitly teach determining a puncture rate; and a puncturing means puncturing each TB at the rate determined by the controller.

19. Morelos-Zaragoza teaches (fig. 4 and col. 4, lines 41-65) determining a puncture rate; and a puncturing means puncturing each TB at the rate determined by the controller. It would have been obvious to one of ordinary skill in the art to adapt this to Lundsjo and Furuskar's system so optimum throughput in response to fluctuation of error rate on a packet radio channel is provided

***Response to Arguments***

20. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

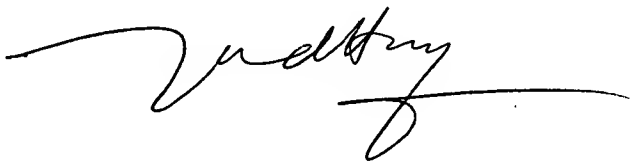
***Conclusion***

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberta A Shand whose telephone number is 571-272-3161. The examiner can normally be reached on M-F 9:00am-5:30pm.

22. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

23. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Roberta A Shand
Examiner
Art Unit 2616



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